



EM - MODEL - CREATION

F. Bologna

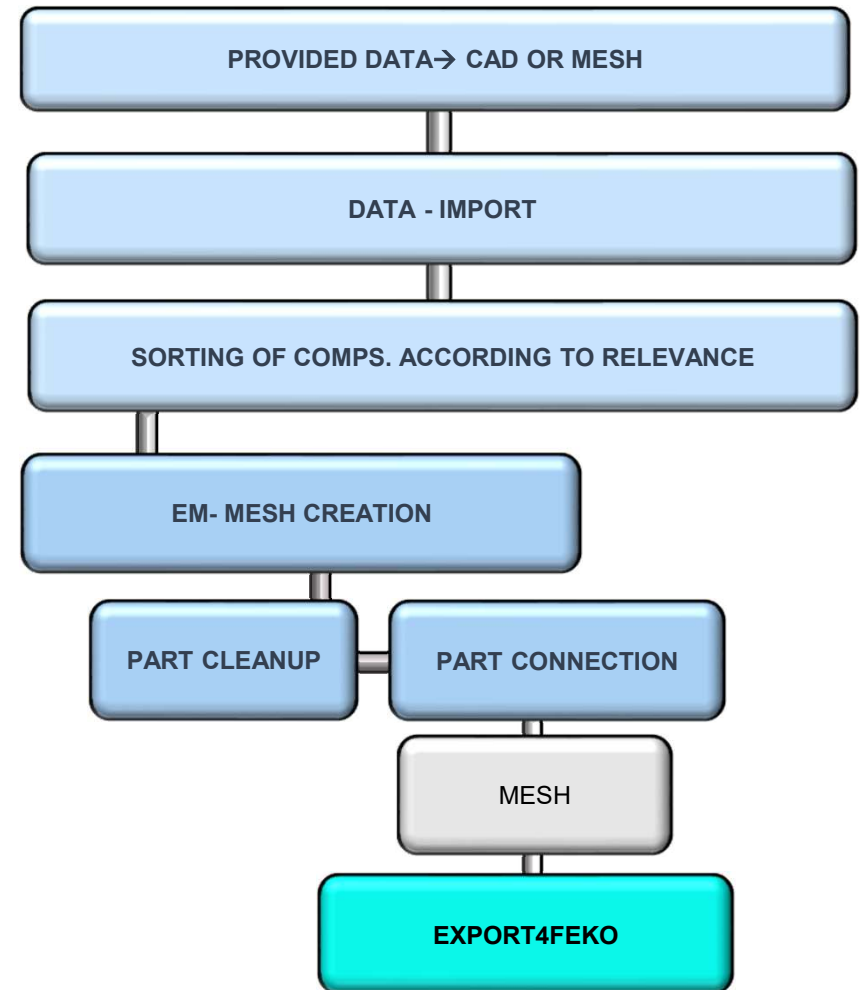
October 2019

HYPERMESH 4FEKO



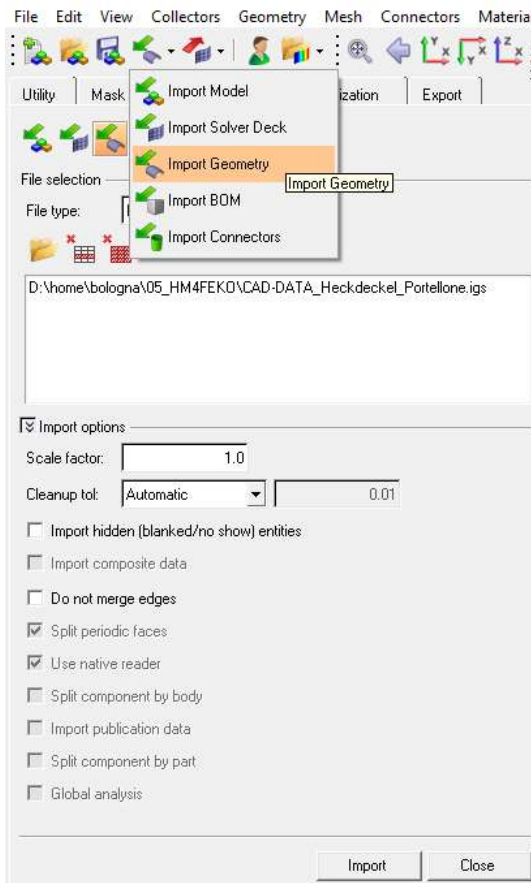
Overview

1. Import DATA → CAD or MESH
2. Selecting the relevant components (Metallic- Parts)
3. Part Cleanup and Simplification – Connection – Mesh Creation
4. HM- EXPORT4FEKO

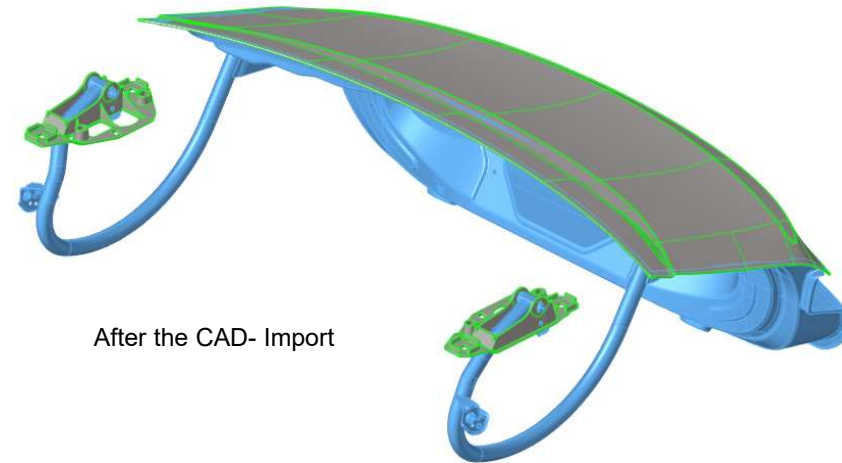


1. Import Data CAD or MESH

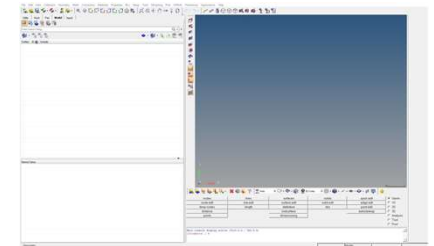
- Import **CAD** Data → *.IGS



Entities	ID	Include
Assembly Hierarchy		
Components (35)		
lv1	1	0
lv2	2	0
lv3	3	0
lv4	4	0
lv5	5	0
lv6	6	0
lv7	7	0
lv8	8	0
lv9	9	0
lv10	10	0
lv11	11	0
lv12	12	0
lv13	13	0
lv14	14	0
lv15	15	0
lv16	16	0
lv17	17	0
lv18	18	0

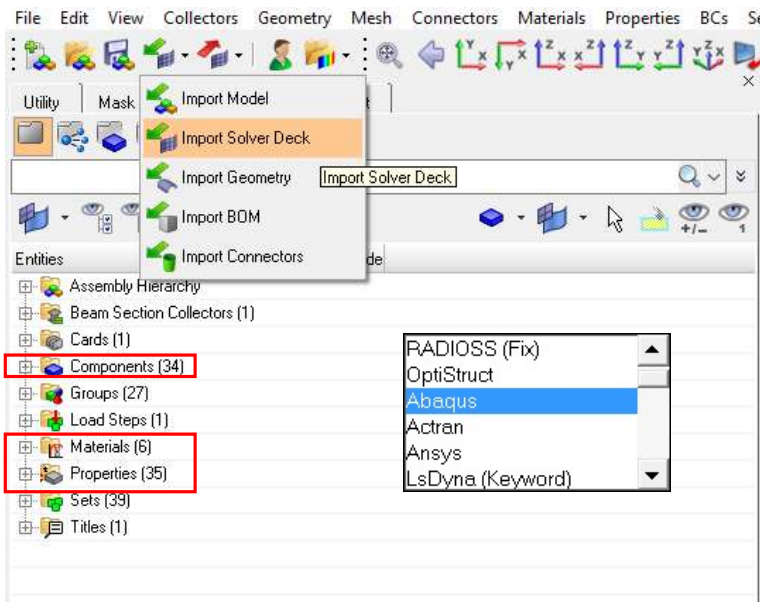


- In general without BOM
Propriete – Material - Thickness...



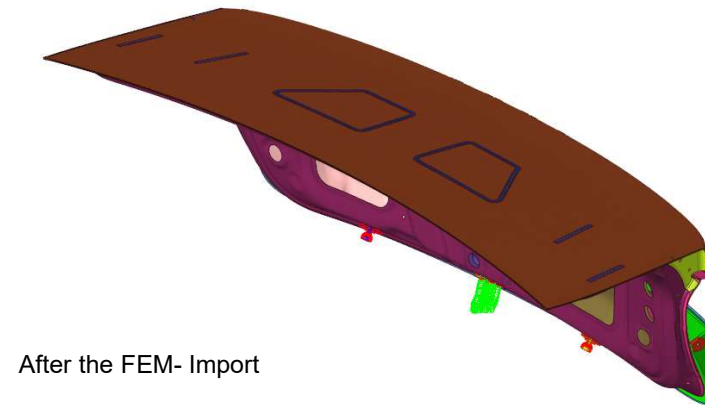
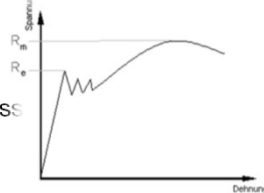
- Import *MESH* Data → *.INC

- The Orig. Import-File was an FEM- ABAQUS Format

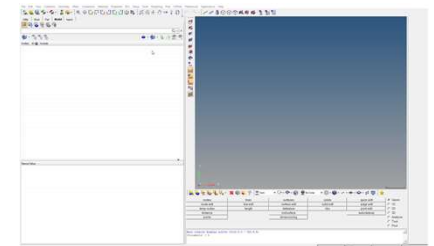


Useful information about:

- Material Properties
- Component Thickness



After the FEM- Import

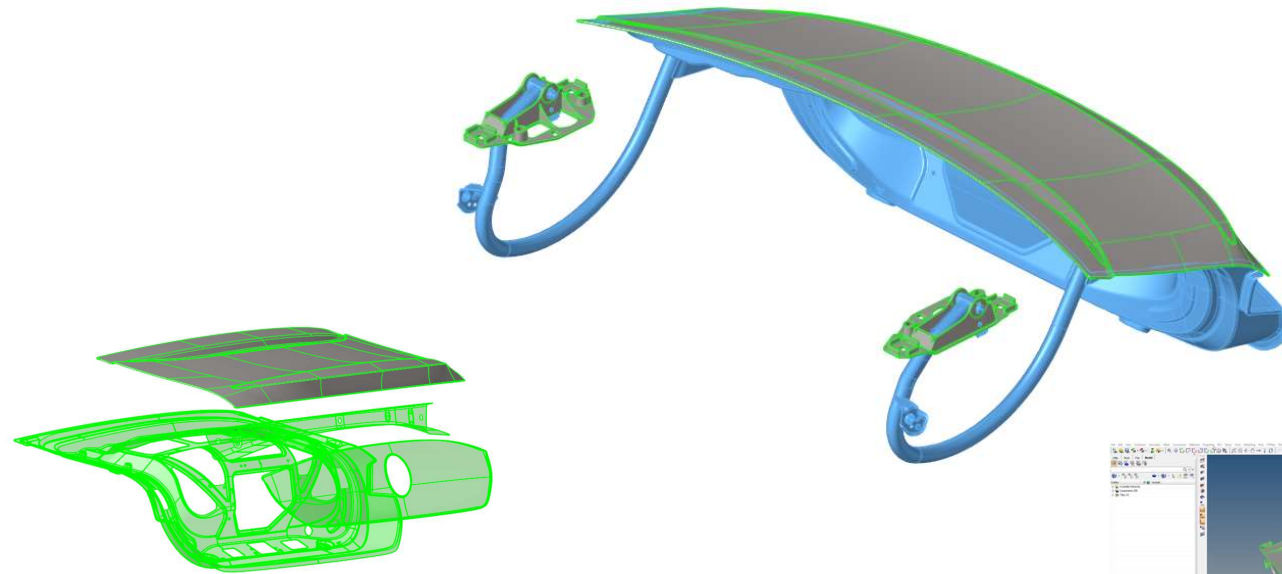


2. Selecting relevant components (Metallic – Parts)

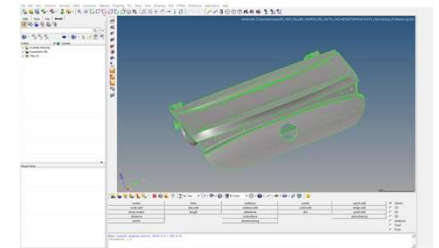
- CAD *.IGS

- orig. components **35**
- Relevant components **4**
- Midsurface creation *.TCL - Script – Process

Entities				ID	Include
Assembly Hierarchy					
Components (35)					
			lv1	1	0
			lv2	2	0
			lv3	3	0
			lv4	4	0
			lv5	5	0
			lv6	6	0
			lv7	7	0
			lv8	8	0
			lv9	9	0
			lv10	10	0
			lv11	11	0
			lv12	12	0
			lv13	13	0
			lv14	14	0
			lv15	15	0
			lv16	16	0
			lv17	17	0
			lv18	18	0



After selection, 4 metallic components remain

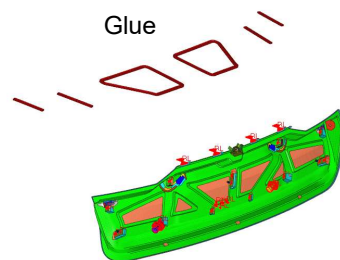


• MESH *.INC

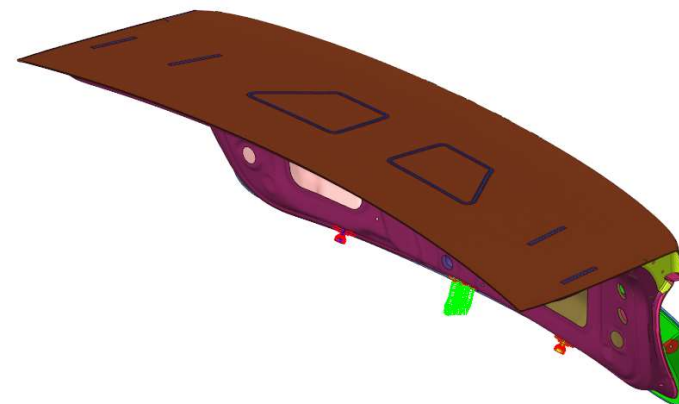
- orig. components 34
- Relevant components 4
- Meshbased CAD creation fe2geo.tcl

Entities	ID	Include
Assembly Hierarchy		
Beam Section Collectors (1)		
Cards (1)		
Components (34)		
Groups (27)		
Load Steps (1)		
Materials (6)		
AL5-STD-Q_KTL_128_26_IDS	4	0
AL6-OUT-T4_KTL_162_18_IDS	3	0
HC600C_IDS	1	0
HIFAX_TKC-461X-BLACK_RT_IDS	2	0
S420MC_IDS	5	0
SIKATACKDRIVE	6	0
Properties (35)		
Sets (39)		
Titles (1)		

Deleted ●

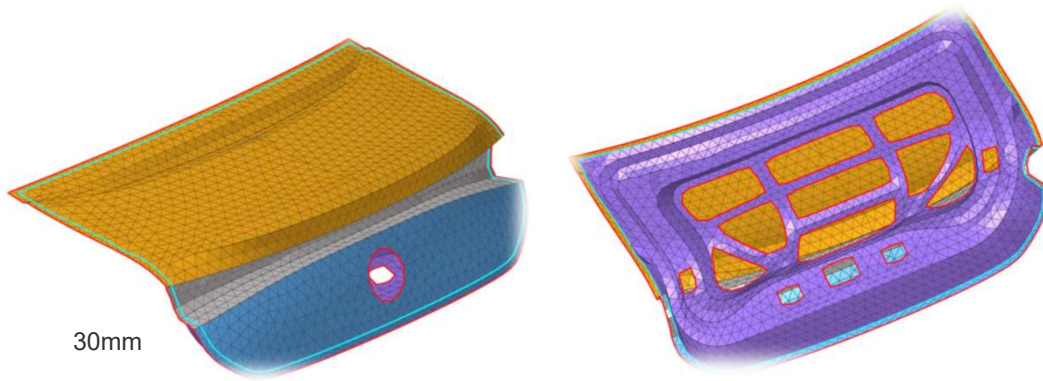


Non metallic Parts
can be cancelled



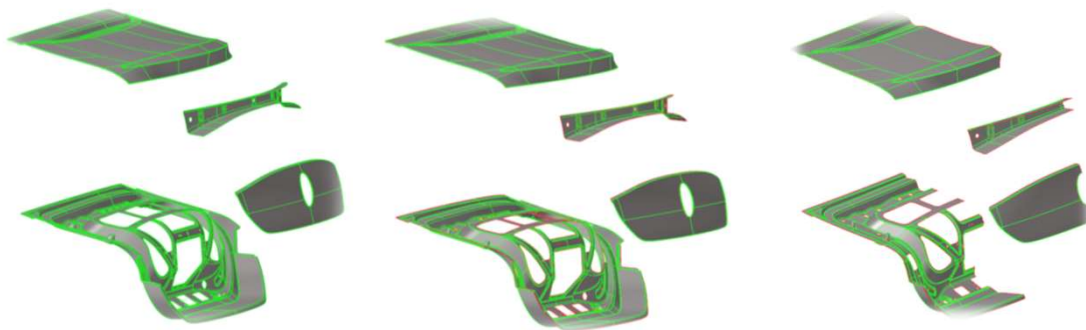
3. Part Cleanup - Simplify - Connection – Mesh Creation

- CAD and MESH



- Part Connection
- Part Cleanup / simplification
- Mesh Creation / Quality Checks

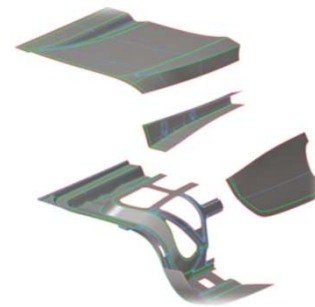
- a) Single Component
- b) Midsurf Parts
- c) Symmetry → Reduce the estimate Time
- d) Cleanup and Part Connection
- e) Mesh Creation and Quality Check



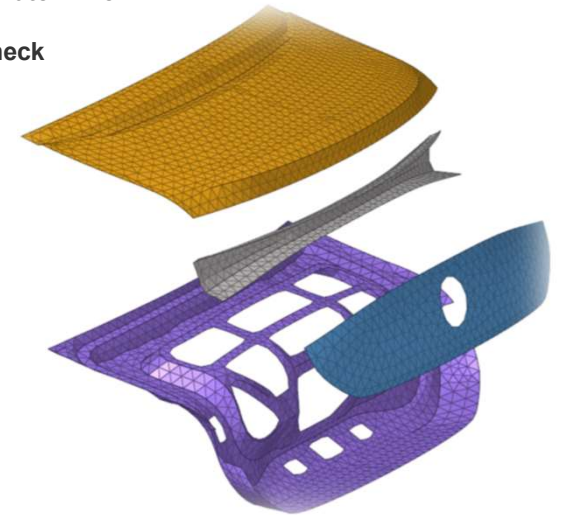
a. Solid Parts

b. Midsurf Parts

c. Symmetry Parts
(Processing Time)



d. Cleanup and connection



e. Mesh and Quality Checks

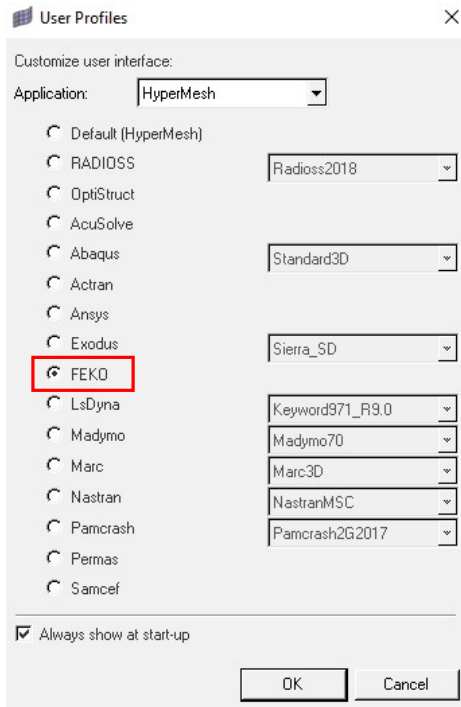
4. HyperMesh Export

- HyperMesh Export
Export Format: *.fem

Altair HyperMesh 2019 – FOR FEKO

NEW USER PROFILE 4FEKO

FEKO SPECIAL USER SETTINGS



SOLID CAD- DATA



1D -SEGMENTS

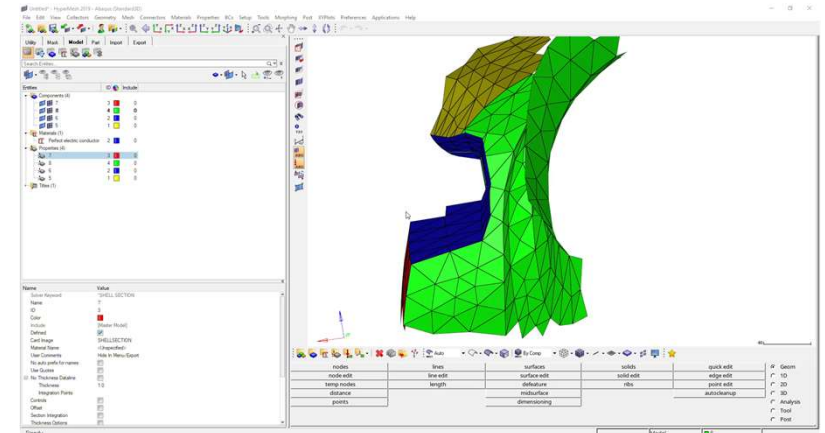
2D –TRIA ELEMENTS



Entities	ID	Include
Components (4)		
8	4	0
7	3	0
6	2	0
5	1	0
Materials (1)		
Perfect electric conductor	2	0
Properties (4)		
8	4	0
7	3	0
6	2	0
5	1	0
Titles (1)		

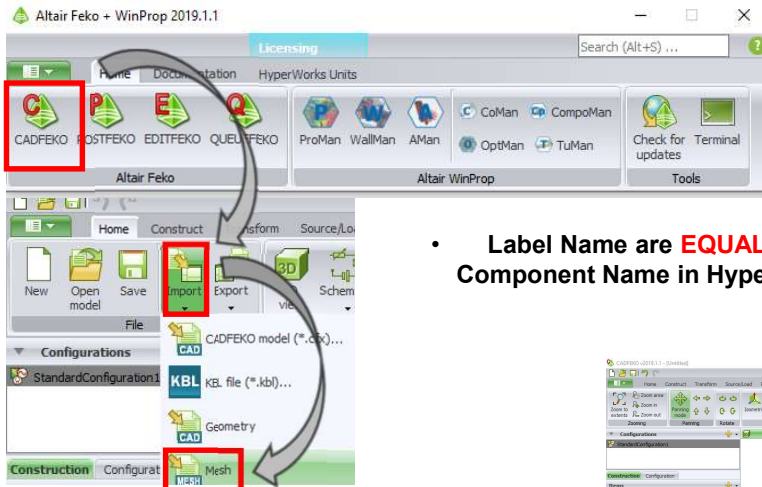


3D – TETRA ELEMENTS



- HyperMesh Import
Import Format: *.fhm

Altair HyperMesh 2019 – FOR FEKO



- Label Name are **EQUAL** as Component Name in HyperMesh

